

**COLUMBIUM (NIOBIUM) STATISTICS**  
**By Thomas D. Kelly and Larry D. Cunningham**  
[All values in metric tons (t) unless otherwise noted]

Year	Mine production	Primary production	Shipments	Imports	Exports	Stocks	Reported consumption	Apparent consumption	Unit value (\$/t)	Unit value (98\$/t)	World production
1964	0	372	310	1,260	80	1,010	727	1,650	2,680	14,100	2,480
1965	0	889	320	1,420	2	1,760	1,010	1,760	2,680	13,900	3,120
1966		1,660	305	2,630	3	2,770	1,270	1,930	3,500	17,600	5,060
1967		889	852	2,720	3	3,970	1,500	1,910	3,060	14,900	5,150
1968		1,080	1,660	1,420	3	3,170	1,420	2,890	2,900	13,600	4,950
1969		1,160	1,540	1,800	19	3,620	1,590	2,070	3,310	14,720	6,610
1970	0	649	1,010	1,950	21	3,570	1,290	2,400	3,530	14,820	8,460
1971	0	463	456	1,150	9	2,830	1,520	1,890	3,280	13,200	3,740
1972	0	669	847	1,650	7	2,640	1,770	2,190	4,070	15,860	5,950
1973	0	679	1,680	2,120	22	2,970	1,960	2,820	4,480	16,430	14,700
1974	0	870	2,010	2,300	8	3,360	2,200	3,150	5,170	17,090	9,340
1975	0	447	693	1,330	12	2,930	1,580	1,950	5,390	16,330	7,860
1976	0	710	456	2,140	15	2,370	1,670	2,720	8,480	24,280	9,470
1977	0	660	489	2,320	17	2,500	1,990	2,170	8,700	23,410	8,800
1978	0	710	839	2,980	22	2,480	2,580	2,990	9,560	23,890	9,670
1979	0	440	917	3,780	23	3,010	2,870	3,230	21,400	48,070	14,400
1980		920	649	4,410	78	3,890	2,950	3,450	20,500	40,560	15,100
1981		519	414	3,610	41	3,780	2,830	3,680	19,300	34,590	14,800
1982			418	1,970	40	2,710	1,670	2,990	14,600	24,660	10,600
1983	0		678	1,480	35		1,960	2,610	14,600	23,890	8,580
1984	0		668	2,790	36		2,450	3,480	11,800	18,520	13,900
1985	0		608	2,720	35		2,710	3,420	11,800	17,880	14,800
1986	0		554	2,160	33		2,270	3,200	8,670	12,890	14,600
1987	0		597	2,750	39		2,350	3,310	7,660	10,990	9,360
1988	0		642	2,730	45		2,670	3,580	7,660	10,560	16,900
1989			662	3,640	104		2,440	3,400	10,300	13,550	14,100
1990				3,030	227		2,590	3,360	10,300	12,850	15,300
1991				3,290	270		2,410	3,310	8,930	10,690	15,700
1992				3,680	350		2,460	3,500	8,930	10,380	15,300
1993	0			3,510	300		2,470	3,500	8,200	9,254	12,400
1994	0			4,240	320		2,750	3,700	8,200	9,018	15,700
1995	0			4,450	370		2,860	3,800	9,460	10,120	15,600
1996	0		30	3,580	190		3,380	3,830	9,460	9,831	16,200
1997	0		126	4,900	70		3,770	4,030	9,460	9,608	20,500
1998	0		145	5,660	50		3,640	4,150	9,460	9,460	26,200
1999	0		280	5,060	160		3,380	4,100	9,460	9,229	23,600

## **Columbium (Niobium) Worksheet Notes**

### **Data Sources**

The sources of data for the columbium (niobium) worksheet are the mineral statistics publications of the U.S. Bureau of Mines and the U.S. Geological Survey—Minerals Yearbook (MYB), Mineral Commodity Summaries (MCS), Mineral Facts and Problems (MFP), Mineral Commodity Profiles (MCP), and the Metal Prices in the United States through 1998 (MP98). The years of publication and corresponding years of data coverage are listed in the References section below. Blank cells in the worksheet indicate that data either were not available or were withheld from publication because they are proprietary. Columbium data prior to 1964 were not included in the columbium (niobium) statistics worksheet because they were either recorded in gross weight, combined with tantalum data, ambiguous in detail, or were not available.

### **Mine Production**

Mine production data for the years 1964–99 were recorded from the MYB. Mine production data for the years 1964–99 represent the columbium content in columbium-bearing ores and mineral concentrates that were mined within the United States. Mine production data for the years 1966–69 were withheld in order to avoid disclosing proprietary data. A small, unreported quantity of columbium contained in columbium-bearing concentrates was produced in the years 1980–82 and 1989–92.

### **Primary Production**

Primary production data for the years 1964–81 were recorded from the MYB. Primary production data for the years 1964–81 represent the columbium content in ferrocolumbium that was produced in the United States. For the years 1982–99, domestic ferrocolumbium production data were not available.

### **Shipments**

Shipment data for the years 1964–99 were recorded from the MYB and the MFP. Shipment data for the years 1964–89 represent the columbium content in columbium metal, compounds, alloys, and other columbium materials that were shipped by domestic producers. Shipment data for the years 1964–89 also include shipments/releases of columbium-bearing materials from the National Defense Stockpile (NDS). Shipment data for the years 1964–89 represent the sum of both domestic producer and NDS shipments. Beginning in 1990, shipment data include only shipments/releases from the NDS. For the years 1990–99, shipment data for domestic producers were not available.

### **Imports**

Import data for the years 1964–68 were recorded from the MFP. Import data for the years 1969–99 were recorded from the MYB. Import data for the years 1964–82 represent the columbium content in columbium mineral concentrates, metal, alloys, ferrocolumbium, tin slags, synthetic concentrates, and other columbium materials that were imported into the United States for consumption purposes. Import data for the years 1983–99 represent the columbium content in columbium mineral concentrates, metal, alloys, and ferrocolumbium that were imported into the United States for consumption purposes. Import data for the years 1983–99 do not include the quantity of contained columbium in imported tin slags, synthetic concentrates, and other columbium materials.

### **Exports**

Export data for the years 1964–71 were recorded from the MFP. Export data for the years 1972–99 were recorded from the MCS. Export data for the years 1964–99 represent the columbium content in various columbium materials that were exported from the United States.

### **Stocks**

Stock data for the years 1964–72 were recorded from the MFP and the MCP. Stock data for the years 1973–82 were recorded from the MFP and the MCS. Stock data for the years 1964–82 represent the columbium content in various columbium materials that were held in industrial producer or processor inventories. Beginning in 1983, domestic columbium stock data were not available.

### **Reported Consumption**

Reported consumption data for the years 1964–99 were recorded from the MYB. Reported consumption data for the years 1964–76 represent the columbium content in columbium metal, ferrocolumbium, nickel columbium, and other various columbium materials that were reportedly consumed within the United States. Reported consumption data for the years 1964–76 also includes small quantities of tantalum contained in various columbium materials that were consumed in the United States. Reported consumption for the years 1977–99 represent the columbium content in ferrocolumbium and nickel columbium that were reportedly consumed in the United States.

### **Apparent Consumption**

Apparent consumption data for the years 1964–75 were recorded from the MFP and the MCP. Apparent consumption data for the years 1976–99 were recorded from the MCS. Apparent consumption data for the years 1964–99 represent the columbium content in various columbium materials that were consumed within the United States annually.

**Unit Value (\$/t)**

Unit value data for the years 1964–99 were recorded from the MP98 and the MYB. Unit value is defined as the value of 1 metric ton (t) of columbium apparent consumption. Unit value data for the years 1964–99 is based on the average value per metric ton (t) of columbium in columbium concentrates.

**Unit Value (98\$/t)**

Unit value is estimated in terms of constant 1998 dollars by dividing the consumer price index conversion factors, with 1998 as the base year, into the actual unit value data.

**World Production**

World production data for the years 1964–68 were recorded from the MFP and the MCP. World production data for the years 1969–99 were recorded from the MYB. World production data for the years 1964–99 represent the columbium content in columbium-bearing ores and mineral concentrates that were produced from mines throughout the world.

**References**

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